

146. The MTBI Committee decided to respond to these types of studies by presenting **biased research** derived from its ongoing survey of retired NFL players. ESPN The Magazine described what happened:

In October 2003, Pellman and members of his committee published the first of a long-running series on concussions in *Neurosurgery*, a scholarly journal edited by Mike Apuzzo, the New York Giants' neurosurgical consultant. The committee's earliest studies used crash test dummies to reenact helmet blows. Later, the group decided to explore the ill effects of multiple concussions, and Pellman charged one of its members, Mark Lovell, head of the University of Pittsburgh Medical Center's Sports Medicine Concussion Program, to oversee the collection and analysis of leaguewide data. Pellman chose Lovell because he had conducted neuropsychological tests for the Steelers as early as 1993. And in 1995, Lovell began to run the NFL's neuropsychology program, which encouraged teams to gather data to help decide when to return players to games.

Using the information they would obtain, Pellman, Lovell and the committee planned to look at baseline results and identify a normal range of scores for uninjured NFL players. Then, comparing postinjury scores to baseline data would show the effects of concussions. Comparing data from players with multiple concussions to that of all injured players would show whether concussive effects changed as injuries accumulated.

A lot was riding on the analysis. The committee had never imposed recommendations on team medical staffs. **But this was the first study ever to analyze the brain function of NFL athletes. If it showed that concussions were significantly impairing players, the league might be forced to institute new rules for evaluating and treating head injuries.** Pellman and Lovell both say they invited all teams to participate in the research (Lovell says 11 teams elected to join the study) and tried to collect as many results as they could. As Lovell puts it, "More data is always better." **Several of the doctors involved, however, tell a different story.** [William]

In 2004, Lovell also asked Richard Naugle, consultant to the Browns and head neuropsychologist at the Cleveland Clinic, for data on just the players who had already suffered concussions, according to an e-mail Naugle wrote to a colleague in March 2005. Naugle declined to comment for this story, citing a confidentiality deal between his medical group and the NFL, but The

This means Pellman, Lovell and their colleagues didn't include at least 850 baseline test results in their research—more than the 655 that ultimately made it into their 2004 *Neurosurgery* paper. At best, their numbers were incomplete. At worst, they were biased.

Pellman, Lovell and their colleagues published their sixth paper in *Neurosurgery* in December 2004. It examined baseline data on 655 players and results for 95 players who had undergone both baseline testing and postconcussion testing. It concluded that NFL players did not show a decline in brain function after suffering concussions. Further analysis found no ill effects among those who had three or more concussions or who took hits to the head that kept them out for a week or more. **The paper didn't explain where the players in the groups came from specifically or why certain players were included and hundreds of others were not. Neither Pellman nor Lovell has provided those details since.** (Emphases added).

The decision to publish the paper was controversial. "I highly doubt this study would have seen the light of day at this journal were it not for the subject matter of NFL players," says Robert Cantú, chief of neurosurgery and director of sports medicine at Emerson Hospital in Concord, Mass., and a senior editor at Neurosurgery. "The extremely small sample size and voluntary participation suggest there was bias in choosing the sample. The findings are extremely preliminary at best, and no conclusions should be drawn from them at this time."

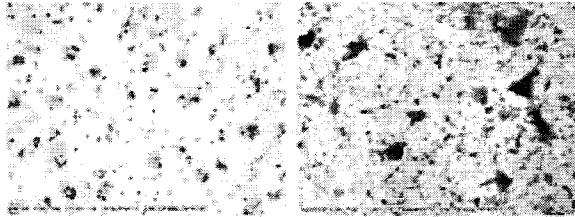
One of the scientists who reviewed the committee's work is equally blunt. **"They're basically trying to prepare a defense for when one of these players sues," he says. "They are trying to say that what's done in the NFL is okay because in their studies, it doesn't look like bad things are happening from concussions. But the studies are flawed beyond belief."** (Emphases added).

148. Guskiewicz was also quoted as saying, **"[t]he data that hasn't shown up makes their work questionable industry-funded research."** (Emphases added).

149. Pellman was not the only NFL hired gun peddling disinformation about head impacts or concussions and brain injuries. Casson and Viano of the NFL's MTBI Committee were playing a similar role, assisted by Lovell.

150. Between 2005 and 2007, Omalu and Dr. Robert Cantu ("Cantu"), Co-Director for the Center for the Study of Traumatic Encephalopathy ("CSTE") at the Boston University School of Medicine ("BUSM"), examined the brain tissue of three deceased NFL players: (a) Mike Webster ("Webster") of the Pittsburgh Steelers, who died of heart failure at the age of 50; (b) Terry Long ("Long") of the Pittsburgh Steelers, who died at 45 after drinking antifreeze; and (c) Andre Waters ("Waters") of the Philadelphia Eagles and Arizona Cardinals, who committed suicide at the age of 44. All three of these individuals suffered multiple concussions during their respective NFL careers. All three exhibited symptoms of sharply deteriorated cognitive functions, paranoia, panic attacks, and depression. In articles published in Neurosurgery in 2005 and 2006, Omalu found that Webster's and Long's respective deaths were partially caused by CTE, related to multiple NFL concussions suffered during their professional playing years. Cantu reached a similar conclusion as to Waters in an article published in Neurosurgery in 2007.

151. The following photographs, available from Brain-Pad Blog, show the contrast between a normal brain (depicted on the left) and Webster's autopsied brain (depicted on the right):



152. In response to Omalu's article on Webster, Casson of the NFL's MTBI Committee wrote a letter in July of 2005 to the editor of *Neurosurgery* asking that Omalu's article be retracted.

153. In 2008, Dr. Ann McKee (“McKee”) of the CSTE at BUSM examined the brain tissue of two other deceased NFL players: (a) John Grimsley (“Grimsley”) of the Houston Oilers, who died of a gunshot wound at the age of 45; and (b) and Tom McHale (“McHale”) of the Tampa Bay Buccaneers, Philadelphia Eagles and Miami Dolphins, who died of a drug overdose at the age of 45. McKee found that Grimsley and McHale’s brain tissue exhibited indications of CTE. As she stated, **“the easiest way to decrease the incidence of CTE [in contact sport athletes] is to decrease the number of concussions.”** (Emphases added). She further noted that “[t]here is overwhelming evidence that [CTE] is the result of repeated sublethal brain trauma.” A *Washington Post* article published in early 2009 reported the following comments by McKee with respect to her analysis of McHale’s brain:

"Is this something that happened by chance?" asked Ann McKee, a neuropathologist at Boston University pointing to pictures of McHale's brain that she said resembled that of a 72-year-old boxer. **"I can tell you I've been looking at brains for 22 years, and this is not a normal part of aging. This is not a normal part of the brain."** (Emphases added).

154. In response to McKee's studies, Casson continued his campaign of NFL-sponsored disinformation by characterizing each as an isolated incident from which no conclusion could be drawn and said he would wait to comment further until McKee's research was published in a peer-reviewed journal. When it was so published in 2009, Casson asserted that "there is not enough valid, reliable or objective scientific evidence at present to determine whether...repeat head impacts in professional football result in long[-]term brain damage." (Emphases added).

155. The increasing controversy drew the attention of Congress. On June 23, 2007, hearings on the NFL's compensation of retired players were held before the Commercial and Administrative Law Subcommittee of the Judiciary Committee of the United States House of Representatives ("C&A Subcommittee"). Plaintiff Boyd testified about post-retirement health problems he faced as a result of concussions he received while he played for the Minnesota Vikings. Goodell was one of those who testified at this hearing. In follow-up responses to the C&A Committee that Goodell sent in November of 2007, he continued to rely on the discredited survey research being undertaken by the MTBI Committee.

156. In response to these hearings and associated media reports, the League scheduled a Concussion Summit in June of 2007. Independent scientists, including Omalu, Cantu and Guskiewicz, presented their research to League and to representatives of the National Football League Players Association ("NFLPA"). As one contemporaneous news article reported:

"I'm not even sure we athletes know what a concussion is," said safety Troy Vincent, who also is president of the

While the NFL commission has focused on short-term effects of concussions, recent findings suggest players may suffer depression, dementia and other symptoms later in life. (Emphases added).

Current research with professional athletes has not shown that having more than one or two concussions leads to permanent problems.... It is important to understand that there is no magic number for how many concussions is too many. (Emphases added).

55

The conflicted interests that burden many NFL trainers exacerbate the NFL's concussion problem. An emerging practice in sports medicine involves medical providers "auctioning off the right to be an NFL team's 'official' medical provider, hospital, or physician-group." The privilege of being selected comes with the right to advertise in one's promotional materials that her group has been named the "official healthcare provider" of a particular team. "In return, the team is provided with medical care for free or at reduced cost."

Former New York Jets lineman Peter Kendall efficiently articulated the conflict-ridden nature of team physicians' return-to-play decisions: "I see guys playing in games that I don't think a personal advocate would allow them to do[.] The doctor who is supposed to be looking out for you is also the same guy who may put you into a game that the team has to win. You're mixing business with medicine." Thus, in three sentences, Kendall summarized the risk involved with trainers practicing medicine under conflicted financial and medical interests.

56

Pellman serves as *both* the Director of Medical Services for the New York Jets *and* as NFL Concussion Committee member. Because of Pellman's dual role, the Jets concussion policies and procedures have drawn heightened scrutiny from outside observers.

Pellman's management of the concussion Jets wide receiver Wayne Chrebet sustained on November 2, 2003 triggered significant criticism from both scientists and players. In this November 2, 2003 game against the New York Giants, Chrebet's concussion left him face down in an unconscious state for several minutes. Pellman elected to send Chrebet back into contact during the *same* game despite Chrebet's prolonged state of unconsciousness. Chrebet was subsequently placed on injured reserve for the remainder of the season. "Chrebet, 34, has recently acknowledged that he has bouts of depression and memory problems so severe that he cannot make the routine drive from his New Jersey home to his Long Island restaurant without a global positioning system." (Emphases partly in original; footnotes omitted).

160. ESPN The Magazine reported vividly on this incident:

"There's going to be some controversy about you going back to play." Elliot Pellman looks Wayne Chrebet in the eye in the fourth quarter of a tight game, Jets vs. Giants on Nov. 2, 2003, at the Meadowlands. A knee to the back of the head knocked Chrebet stone-cold unconscious a quarter earlier, and now the Jets' team doctor is putting the wideout through a series of mental tests. Pellman knows Chrebet has suffered a concussion, but the player is performing adequately on standard memory exercises. "This is very important for you," the portly physician tells the local hero, as was later reported in the *New York Daily News*. "This is very important for your career." Then he asks, "Are you okay?" When Chrebet replies, "I'm fine," Pellman sends him back in.

A couple of days after Wayne Chrebet is knocked senseless by the Giants, he is sluggish and tired, and his head aches. "It was stupid, trying to get back out there," he says. "That's just me trying to convince them and

myself that everything is all right." The Jets staff, including Pellman and Barr, diagnose Chrebet with postconcussion syndrome. Ten days after the game, the Jets place Chrebet on injured reserve.

Pellman makes no apologies. "Wayne returned and was fine," he tells the media. "He did not suffer additional injury. If he had suffered additional injury, his prognosis would be no different.

"Let's say I didn't allow him to return to play, and he played the following week," he continues. "The same thing could have happened. The decision about Wayne returning to play was based on scientific evaluation. As we stand now, that decision made no difference as to what's happening today.

"This decision is so that I can sleep well at night and so Wayne's wife can sleep well at night," he says about ending Chrebet's season.

"Nobody gets second-guessed."

161. This incident corroborates another factor contributing to the NFL's practices—that NFL player contracts are structured in a manner to incentivize underreporting of concussions. Such contracts typically do not guarantee payment to players beyond the season in which an injury occurs. If the player cannot pass the medical check-up at the commencement of the subsequent season, the contract is voided and the player may end up paying medical expenses for brain injuries or cognitive impairment incurred on the playing field. This system operates to discourage players from admitting to concussions. As the same 2009 article quoted earlier explained:

A sad consequence of the NFL's player contract scheme is the tendency of players to withhold concussion symptoms from their trainers and team management for fear of losing their jobs. Dr. Kenneth Podell, director of the Sports Concussion Safety Program at the Henry Ford Health System, summarizes the problematic situation: "The pressure

is intense; there's always someone on the bench waiting to take your place."

When team management becomes privy to a player's concussion history, the team holds all leveraging power in restructuring a player's contract. Players are faced with the following Hobson's choice: (i) accept a less lucrative contract or (ii) face employment termination. Dan Morgan, former Carolina Panthers linebacker, suffered at least five concussions during his tenure with the Panthers. Faced with the alternative of termination, Morgan "agreed to restructure his \$2 million roster bonus into payments of \$125,000 for each game played. Beyond acknowledging the team's concerns about subsequent concussions, the contract gave Morgan financial incentive not to reveal any concussion for treatment."

Even when a player is confident enough to disclose his concussive symptoms to a team trainer, he will not likely refuse a coach's orders to return to play for fear of losing his starting position in the lineup. A recent example of this situation involved the New England Patriots franchise. While playing linebacker for the Patriots in 2002, Ted Johnson sustained a severe concussion. After Johnson discussed his symptoms with his team trainer, the trainer advised Patriots coach Bill Belichick not to return Johnson to contact play until he became asymptomatic.

Belichick disregarded the trainer's advice by continually sending Johnson back into full contact practices. In defending his decision to return Johnson to play against the trainer's orders, Belichick said: "If [Johnson] felt so strongly that he didn't feel he was ready to practice[,] he should have told me." The flaw in Belichick's logic is that it assumes Johnson was confident enough in his job security to defy his coach's orders. If Johnson informed Belichick of his inability to return to play, he would have effectively terminated his own contract with the Patriots. (Emphases added).

162. In November of 2008, Greg Aiello ("Aiello") sounded a similar theme, saying to the press that "[h]undreds of thousands of people have played football and other

sports without experiencing any problem of this type and there continues to be considerable debate within the medical community on the precise long-term effects of concussions and how they relate to other risk factors." (Emphasis added). He neglected to mention that the debate was principally between the scientists in the pay of the League and scientists operating independently of the League.

163. The disingenuous nature of the NFL position was exposed in September 10, 2009, when the University of Michigan's Institute for Social Research published a study of retired NFL players commissioned by the NFL Player Care Foundation. The study found that retired NFL players are diagnosed with Alzheimer's disease or similar medical conditions far more often than the national population—including a rate of 19 times the normal incidence for men aged 30 through 49.

164. Despite these findings from a study that the League sponsored, the NFL continued to deny publicly any link between concussions on the playing field and dementia. A September 29, 2009 New York Times article reported as follows:

An N.F.L. spokesman, Greg Aiello, said in an e-mail message that the study did not formally diagnose dementia, that it was subject to shortcomings of telephone surveys and that "there are thousands of retired players who do not have memory problems."

"Memory disorders affect many people who never played football or other sports," Mr. Aiello said. "We are trying to understand it as it relates to our retired players."

As scrutiny of brain injuries in football players has escalated the past three years, with prominent professionals reporting cognitive problems and academic studies supporting a link more generally, the N.F.L. and its medical committee on concussions have steadfastly denied the existence of reliable data on the issue. The league pledged to pursue its own studies, including the one at the University of Michigan.

Dr. Ira Casson, a co-chairman of the concussions committee who has been the league's primary voice denying any evidence connecting N.F.L. football and dementia, said: "What I take from this report is there's a need for further studies to see whether or not this finding is going to pan out, if it's really there or not. I can see that the respondents believe they have been diagnosed. But the next step is to determine whether that is so."

The N.F.L. is conducting its own rigorous study of 120 retired players, with results expected within a few years. All neurological examinations are being conducted by Dr. Casson. (Emphases added).

165. After the publication of the University of Michigan study, the House Judiciary Committee commenced an inquiry into "Legal Issues Relating To Football Head Injuries" and held its first hearing on October 28, 2009. Representative John Conyers ("Conyers") summarized the evidence:

There appears to be growing evidence that playing football may be linked to long-term brain damage. For example, a 2003 University of North Carolina study found that professional players who suffered multiple concussions were three times more likely to suffer clinical depression than the general population. A follow-up study in 2005 showed NFL players suffering concussions had five times the rate of cognitive impairment. And retired players were 37 percent more likely to suffer from Alzheimer's than the population as a whole. Earlier this year, the University of Michigan released a study that found that 6.1 percent of NFL players over 50 years of age reported they had received a dementia-related diagnosis—a statistic five times higher than the national average. Players age 30 through 49 showed a rate of 1.9 percent of dementia-related diagnosis 19 times that of the national average.

The National Football League is performing its own long-term study, **and has largely sought to discredit these reports or some of the conclusions drawn from**

some of these reports. The football league described the reports as flawed.

Dr. Ira Casson, the co-chair of the NFL's Mild Traumatic Brain Injury Committee, denied the linkage on six separate occasions. When asked whether there was any linkage between playing football and CTE, Dr. Casson stated that it has never been scientifically, validly documented. The league said the recent University of Michigan study was flawed and that further study was necessary. The *New York Times* data released last week, was, they said, for self-promotional and lobbying purposes of the union. Given there is no consensus between the league and its players and the medical community about the causes of these cognitive disorders, it should come as no surprise there is little agreement about how to respond. (Emphases added).

166. Representative Linda Sanchez ("Sanchez"), who had participated in the 2007 hearings mentioned earlier, was present and stated:

There are increasing studies and a body of evidence that show that there is a significant risk to individuals who suffer repeated head trauma, whether it's in the NFL, in professional boxing, or even high school sports, and while there are those here today who will argue against the validity of some of these studies, there appears to be a preponderance of evidence that a number of professional athletes who suffer repeated head trauma experience physical and mental decline earlier than the general population at large, and it would seem to me—and I stated this to Commissioner Goodell at the last hearing that we held that it would be better for the NFL and the NFLPA to be proactive in alerting its players to the risks that they face, and it's my hope that in the discussion that we have here today, the NFL and the NFLPA will make continued improvements in educating players on the dangers they face by playing with a concussion, treating those athletes appropriately who do have concussions, and removing the stigma that pressures players to play through the injury, and one of the most recent quotes that was heard on November 29th, 2009, was an interview during the pregame show before the

Steelers' matchup with the Ravens when somebody said, basically, that he had been dinged up and got right back into the game and that, you know, just because somebody's having headaches, pretty much the quote is, you know, they need to suck it up and continue to play on, and the fact of the matter is that sucking it up and continuing to play on may mean very serious and grave consequences down the line.

Many witnesses that we have had before the Committee have testified about how the NFL, like it or not, influences the lower levels of football, and the actions that they take or the actions that they choose to ignore to take have significant impact on players at lower levels. The NFL, quite frankly, has vast resources available to its disposal to educate coaches and players and medical personnel on the proper way to handle a concussed player, and if they have all these resources available to them and are not addressing the problem, imagine how can we expect every high school or college to be able to properly treat a concussed player if that proper action isn't being taken at the very top levels of the sport? (Emphases added).

167. Despite this overwhelming evidence, Goodell refused to answer questions of whether NFL-related concussions led to cognitive decline among retired players. The Judiciary Committee played a televised interview of Casson denying any links between NFL players' multiple head injuries and subsequent cognitive deterioration.

168. Sanchez pressed the issue with Goodell during his testimony as follows:

Now, the question that I have for you is, I am a little concerned, and I hear the concern expressed by some of the witnesses on the panel today, that **the NFL sort of has this kind of blanket denial or minimizing of the fact that there may be this, you know, link. And it sort of reminds me of the tobacco companies pre-1990's when they kept saying no, there is no link between smoking and damage to your health or ill health effects. And they were forced to admit that that was incorrect through a spate of litigation in the 1990's.** And my question to you is wouldn't the league be better off legally, and wouldn't high school and college football

players be better off, if instead of trying to minimize this issue, the league took the opposite perspective and said, look, even if there is a risk, however minuscule, that there may be this link, so we really need to jump on top of it and make kids and parents aware of this so that there isn't this sort of sense that the NFL is really just slow walking the issue to death by saying, well, we have been studying the issue for 15 years, we are going to maybe study it another 15 more years, when there is already non-NFL paid for research that suggests that there is this very high correlation with cognitive impairment? Don't you think the league, you know, would be better off legally, and that our youth might be a little bit better off in terms of knowledge, if you guys just embraced that there is research that suggests this and admitted to it? (Emphases added).

Mr. GOODELL. Well, Congresswoman, I do believe that we have embraced the research, the medical study of this issue. As you point out——

Ms. SANCHEZ. You are talking about one study, and that is the NFL's study. You are not talking about the independent studies that have been conducted by other researchers. Am I correct in stating that?

Mr. GOODELL. I am not sure of your question.

Ms. SANCHEZ. There are other studies, research in dementia and CTE that show that there is a link. But again the league seems to downplay that and say, well, you know, we are conducting our own study and, you know, when we have that study completed then we will know.

Mr. GOODELL. No, I think what we are doing is because we have to a large extent driven this issue by making sure that we have medical professionals studying this issue. I am not a medical professional.

[Ms. SANCHEZ.] So my question is why are you even going through, you know, the charade of presenting the final analysis of going through this study if the determination, in my opinion, has already been made

by Dr. Casson and, you know, is denied in the pamphlet that they hand out to NFL players?

Mr. GOODELL. Well, first let me say I do not, and I think you stated that he is the only one examining these patients and the findings. That is not correct.

Ms. SANCHEZ. He is not controlling the examinations or the findings?

Mr. GOODELL. I would not say he is controlling that at all, no.

Ms. SANCHEZ. He is participating in it, though.

Mr. GOODELL. I do not know if he is participating in the examinations. I can find that out.

Ms. SANCHEZ. And he has been a consultant to the NFL, is that correct?

Mr. GOODELL. He has been on our MTBI committee for several years, yes.

Ms. SANCHEZ. And some of the people who are participating in this study have other conflicts of interest. You know, one of the committee members on the concussion committee owns the company that makes and markets, mainly through its use by most of the NFL teams, the neuropsychological test that is used in the study. Isn't that true?

Mr. GOODELL. I don't know the answer to that question, but I will find out for you.

Ms. SANCHEZ. My suggestion would be, and my time has expired, but my suggestion would be that instead of having NFL-connected consultants and doctors, that perhaps the true findings of a truly unbiased study would be better conducted by people who have not been on the payroll or not been retained by the NFL in any capacity. (Emphases added).

169. The NFL thereafter reacted to this barrage of criticism by having Casson and Viano, who had replaced Pellman as co-chairs of the MTBI Committee, resign, and suspending that Committee's research. The League also pledged to donate a paltry \$1 million to subsidize the CSTE's research on CTE.

170. On December 2, 2009, Goodell announced an update on concussion guidelines for the League's players. The statement outlined several changes. First, players who sustained a concussion should not return to practice or game play the same day if the following signs or symptoms are present: loss of consciousness, confusion, amnesia or other memory problems, abnormal neurological exam, new and persistent headache, or any other persistent concussion signs. Second, if a player is held from a game, clearance for return to play should be determined by both the team physician and an independent neurological consultant. Return to play should not be considered until the athlete is asymptomatic, both at rest and with exertion, has a normal neurological exam, and has normal neuropsychological testing. The NFL subsequently clarified that primary sports care physicians could be treated as independent neurological consultants.

171. Aiello, the League spokesperson who had made staunch denials of the link between concussions and brain injury as late as September of 2009, made the following admission in a December 20, 2009 interview with a reporter for the *New York Times*:

After weeks of transforming its approach to concussions and its research into their long-term effects among players, the N.F.L. not only announced Sunday that it would support research by its most vocal critics but also conceded publicly for the first time that concussions can have lasting consequences.

"It's quite obvious from the medical research that's been done that concussions can lead to long-term problems," the league spokesman Greg Aiello said in a telephone

interview. He was discussing how the league could donate \$1 million or more to the Center for the Study of Traumatic Encephalopathy at Boston University, whose discoveries of brain damage commonly associated with boxers in the brains of deceased football players were regularly discredited by the N.F.L.

Told that his statement was the first time any league official had publicly acknowledged any long-term effects of concussions, and that it contradicted past statements made by the league, its doctors and literature currently given to players, Aiello said: "We all share the same interest. That's as much as I'm going to say."

Since an Oct. 28 hearing before the House Judiciary Committee, when the league's approach to science was compared to that of the tobacco industry, the N.F.L. has accepted the resignations of the co-chairmen of its concussion committee and overhauled its policies toward concussion management. Players now must be cleared by brain-injury experts unaffiliated with the team, and cannot return to a game or practice in which they have shown any significant sign of concussion.

The second rule has since been recommended by an N.C.A.A. committee as standard policy for athletes in all sports, and will be considered by several state legislatures that have bills governing high school athletics before them.

The recent changes by the N.F.L. had amounted to tacit acknowledgments that it was no longer able to defend a position that conflicted with nearly all scientific understanding of head trauma.

Until recently, the league and its committee on concussions had consistently minimized evidence testifying to the risks of repeated brain trauma in N.F.L. players — from researchers like those at Boston University, to phone surveys the league itself commissioned, to demographic analysis of players known to have early-onset dementia. While discrediting such evidence, a pamphlet on concussions currently given to players states, "Research is

currently underway to determine if there are any long-term effects of concussion in N.F.L. athletes.”

That research study, conducted by the N.F.L.’s committee on concussions, was recently suspended amid strong criticism of its design and execution by outside experts, players and members of Congress.

“Mr. Aiello’s statement is long overdue — it’s a clear sign of how the culture of football has changed in recent months,” Dr. Robert Stern, a co-director of the Boston University center and its Alzheimer’s Disease Clinical and Research Program, said in a telephone interview.

“There is no doubt that repetitive blows to the head result in long-term problems in the brain, including progressive dementia. With the N.F.L. taking these recent actions, we are finally at a point to move forward in our research and ultimately solve this important problem — for professional athletes and collegiate and youth players.” (Emphases added).

172. Despite these concessions, the problem continued unabated. Thirty of 160 NFL players surveyed by the Associated Press in November of 2009 stated that they either failed to report or underreported concussion symptoms. Players admitted that they returned to play after a concussion feeling dazed or woozy or suffering from blurred vision.

173. In March of 2010, the MTBI Committee got a new name and new co-chairs. It was rechristened as the Head, Neck and Spine Medical Committee, and became jointly chaired by Dr. H. Hunt Batjer (“Batjer”) of Northwestern Memorial Hospital, and Dr. Richard Ellenbogen (“Ellenbogen”) of Harborview Medical Center in Seattle. Batjer and Ellenbogen replaced Casson and Viano, who in turn had replaced Pellman.

174. In a May 2010 Congressional hearing, Representative Anthony Weiner addressed Batjer and Ellenbogen as follows: “[y]ou have years of an infected system here, [and] your job is...to mop [it] up.” (Emphases added).

175. Batjer and Ellenbogen conceded in June of 2010 that the League's efforts with respect to concussions and brain injury were riddled with duplicity, conflicts of interest and shocking ineptitude. As was reported in a June 1, 2010 New York Times article:

They accused a fellow doctor of minimizing solid evidence of the dangers of football concussions. They concurred that data collected by the N.F.L.'s former brain-injury leadership was "infected," said that their committee should be assembled anew, and formally requested that the group's former chairman, Dr. Elliot Pellman, not speak at a conference Wednesday.

For the first time these remarks came not from outside critics of N.F.L. research but from those now in charge of it — Dr. H. Hunt Batjer and Dr. Richard G. Ellenbogen, prominent neurosurgeons who became co-chairmen of a new league committee in March. One week after two members of Congress accused the doctors of sounding too much like their predecessors, and on the eve of a league-sponsored symposium in Washington held by Johns Hopkins Medicine, Batjer and Ellenbogen made clear they planned to chart a new course.

The two doctors criticized Johns Hopkins's promotional brochure for Wednesday's conference — which was open only to N.F.L. medical personnel, other doctors and members of the United States Department of Defense — for playing down existing evidence of brain damage in retired football players.

The opening paragraph described the disease chronic traumatic encephalopathy as "now being reported in football players, although with unknown frequency." It added that these and related matters had been reported by the news media "with considerable hype around assertions of long-term harm to players from head injuries."

Batjer and Ellenbogen said that the frequency of reports of C.T.E. in players is not unknown — a Boston University research group has diagnosed it in all 12 former college and N.F.L. players of various ages it had tested for the condition.

“They aren’t assertions or hype — they are facts,” said Ellenbogen, the chief of neurological surgery at Harborview Medical Center in Seattle, who has been instrumental in drafting legislation to protect young athletes from head injuries.

He added: “Doctors were relatively ineffectual for 25 years on this issue. Then it’s on the front page and everything focuses like a laser beam and things begin to change from baby steps to giant steps forward protecting kids. From a doctor-patient perspective, it’s been the single best thing that has happened to this subject.”

Dr. Constantine G. Lyketsos, a professor of psychiatry and behavioral sciences at Johns Hopkins who is directing Wednesday’s conference, said in a telephone interview that he wrote the brochure and that the N.F.L. had no role with the event, other than providing financing. He defended his choice of words.

“We know of 12 cases” of C.T.E., Lyketsos said. “We don’t know how many don’t have it.”

Regarding news media coverage of the harm caused by repeated concussions in football players, Lyketsos said: “There is a concern that I have that the possibility of serious long-term consequences are being overemphasized without clear evidence. It could turn out correct. It could turn out incorrect. We don’t know.”

He added: “I worry that it might be a disservice. That’s a possibility.”

The league spokesman Greg Aiello declined to comment on Lyketsos’s statements, other than saying that the league has given \$1 million to the Boston University group to support its research.

The former leaders of the N.F.L. concussion committee generally agreed with Lyketsos, an attitude that ultimately came to the attention of Congress and led to several hearings on the subject of sports concussions in athletes of all ages. Batjer and Ellenbogen had a shaky debut before some frustrated members of the House Judiciary Committee during a forum in New York on

May 24, but in the following days they made sure they would no longer resemble their predecessors.

The doctors said the old committee's ongoing studies on helmets and retired players' cognitive decline — whose structure and data were strongly criticized by outside experts — would not be used in any way moving forward. They said they were influenced by a comment made to them last Monday by Representative Anthony D. Weiner, Democrat of New York: "You have years of an infected system here that your job is to some degree to mop up."

"The word 'infected' hit me right between the eyes," said Ellenbogen. He and Batjer became co-chairmen of the N.F.L. committee in March.

Batjer added: "We all had issues with some of the methodologies described, the inherent conflict of interest that was there in many areas that was not acceptable by any modern standards or not acceptable to us. I wouldn't put up with that, our universities wouldn't put up with that, and we don't want our professional reputations damaged by conflicts that were put upon us."

Batjer said that he and Ellenbogen had begun reconstituting their committee from scratch. He said that six members had been selected so far, none of them holdovers from the prior regime.

The doctors so wanted to distance themselves from the past that on Monday they requested that Pellman, who was scheduled to deliver some opening remarks at the Johns Hopkins symposium, be removed from the program. Pellman was the chairman of the N.F.L. concussion committee from 1994 to 2007 and stayed on it until he resigned in March. He remains the league's medical director and helped with the conference's logistics.

On Tuesday, an e-mail message was distributed to conference organizers saying that Pellman would not attend the conference for family-related reasons.

“Neither Rich nor I thought he should appear to represent the N.F.L. in what would look like a leadership role,” Batjer said. “It’s not about Elliot. It’s about a complete severance from all prior relationships from that committee.” (Emphases added).

176. As reported in a July 26, 2010 article in the New York Times, on June 10, 2010, the NFL issued a warning poster that was placed in the locker rooms of member clubs and was also turned into a pamphlet. A copy of the poster is reproduced below. It stands in stark contrast to the pamphlet issued by the League in April of 2007. This advice was never given previously by the NFL and was certainly not given to players who retired prior to June of 2010.

As the same article went on to note:

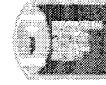
The league’s reversal is not necessarily complete. On April 30, an outside lawyer for the league, Lawrence L. Lamade, wrote a memo to the lead lawyer for the league’s and union’s joint disability plan, Douglas Ell, discrediting connections between football head trauma and cognitive decline. The letter, obtained by The New York Times, explained, “We can point to the current state of uncertainty in scientific and medical understanding” on the subject to deny players’ claims that their neurological impairments are related to football. (Emphases added).



CONCUSSION

A Must Read for NFL Players

Let's Take Brain Injuries Out of Play



Concussion Facts

Concussion is a brain injury that alters the way your brain functions

Concussion can occur from a blow to the head/body:

- following helmet to helmet contact, and / or
- contact with the ground, object or another player

Most concussions occur without being knocked unconscious

Severity of injury depends on many factors and is not known until symptoms resolve and brain function is back to normal

All concussions are not created equally. Each player is different, each injury is different and all injuries should be evaluated by your team medical staff

Concussion Symptoms

Different symptoms can occur and may not show up for several hours. Common symptoms include:

- Confusion
- Headache
- Amnesia / Difficulty remembering
- Balance problems
- Irritability
- Dizziness
- Difficulty concentrating
- Nausea
- Feeling sluggish, foggy or groggy
- Sensitivity to noise
- Sensitivity to light
- Double / fuzzy vision
- Slowed reaction time
- Feeling more emotional
- Sleep disturbances
- Loss of consciousness

Symptoms may worsen with physical or mental exertion (e.g. lifting, computer use, reading)

Why Should I Report My Symptoms?

- Practicing or playing while still experiencing symptoms can prolong the time to recover and return to play.
- Unlike other injuries, there may be significant consequences of “playing through” a concussion. Repetitive brain injury, when not treated promptly and properly may cause permanent damage to your brain.

What Should I Do If I Think I've Had a Concussion?

Report it. Never ignore symptoms even if they appear mild. Look out for your teammates. Tell your Athletic Trainer or Team Physician if you think you or a teammate may have had a concussion.

Get Checked Out. Your team medical staff has your health and well being as its first priority. They will manage your concussions according to NFL / NFLPA Guidelines which include being fully asymptomatic, both at rest and after exertion, having a normal neurologic examination, normal neuropsychological testing, and clearance to play by both the team medical staff and the independent neurologic consultant.

Take Care of Your Brain. According to the CDC*, "traumatic brain injury can cause a wide range of short- or long term changes affecting thinking, sensation, language, or emotions". These changes may lead to problems with memory and communication, personality changes, as well as depression and the early onset of dementia. Concussions and conditions resulting from repeated brain injury can change your life and your family's life forever.



Work smart. Use your head,
don't lead with it. Help make
our game safer. Other athletes
are watching...



*for more information about traumatic brain injury and concussion, go to <http://www.cdc.gov/concussion>

177. Yet even after this new warning, NFL players are still going out on the field after receiving significant concussions. In a September 19, 2010 posting by Sam Donellon on philly.com, it was noted:

A THOUSAND pardons. For the game plan, for the execution, for the ever-present "Not putting the guys in the right places" to succeed during Sunday's 27-20 loss to the Green Bay Packers.

[Philadelphia Eagles Head Coach] Andy Reid issued his familiar post-loss mea culpas yesterday, vowing to "tighten up" special teams play, execution particularly on offense, and even his play-calling.

The only thing he didn't apologize for was how, or why, two of his stars were allowed to re-enter the game after getting concussed Sunday afternoon at Lincoln Financial Field.

That's because in his mind, and apparently in the minds of too many still involved in the NFL, he and his medical staff did what it was supposed to do in the cases of Stewart Bradley and Kevin Kolb. Asked all the right questions, got all the right answers, sent both back into a game even after both had displayed, for a national audience to see, evidence of head trauma.

To wit:

Kolb lying face down for several seconds before rising slowly, grass hanging from his facemask, walking slowly from the field;

Bradley bouncing up after an inadvertent knee-to-helmet hit, only to stumble back down to the ground, clearly disoriented.

That's a key word, disoriented. It's used in those famous updated guidelines the NFL issued last December to teams regarding concussions in the wake of congressional hearings and some high-profile injuries, including the repeated concussions to former Eagle Brian Westbrook.

"A player who suffers a concussion should not return to play or practice on the same day," said an NFL release on those guidelines, which lists among symptoms "Loss of consciousness" and "Confusion as evidenced by disorientation to person, time or place; inability to respond appropriately to questions; or inability to remember assignments or plays."

So what are we missing here? Reid said repeatedly Sunday, and again yesterday, that appropriate answers were given to questions. He said Kolb's inability to remember plays was only evident after he returned to play, and he was yanked after a three-and-out series.

But both men were clearly disoriented when they first reached their feet, and this is where we tread into the NFL's continued ambiguity over what it views as serious head trauma. Was Bradley's stumble due to poor balance or dizziness? The guidelines say poor balance necessitates removal, dizziness not necessarily so. But what's the difference and how the hell can anyone tell? Aren't they the same thing?

178. As another example, the Concussion Blog reported on Austin Collie ("Collie"), a wide receiver who played for the Indianapolis Colts in 2010. Collie suffered a concussion in Week 9 of the regular season and was benched in Week 10. He returned in Week 11, and was withdrawn after playing part of that game because of "worsening symptoms." He was benched in Weeks 12-14, but returned in Week 15, only to receive yet another concussion.

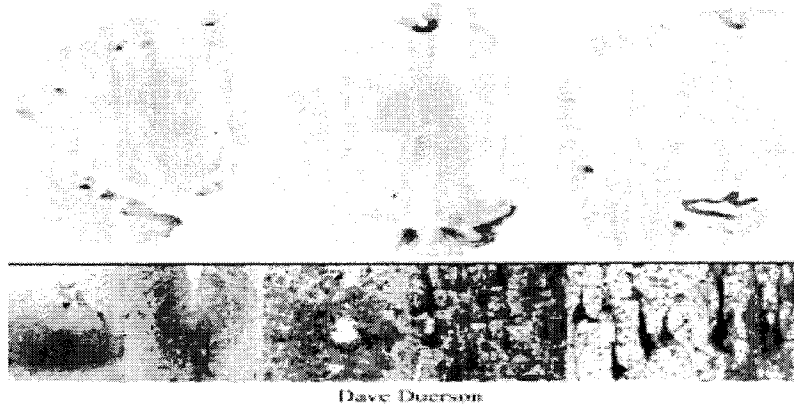
As Concussion Blog noted:

NFL "Policy" indicates that a player will not return from a concussion unless they pass all tests. Therefore if Indianapolis followed the "policy" then Collie was cleared and passed all tests by Week 11, and his first concussion resolved. The reports of more/worsening symptoms after 1st half of Pats game indicates that he MUST have sustained a second concussion. Then upon returning this week that would have meant that he cleared all tests and AGAIN sustained a concussion, his THIRD. Let me be clear here, you can only "aggravate" a concussion if you have not recovered from the first. And

a player SHOULD NOT be playing with an unresolved concussion, by "policy". ... The Colts already are spinning this one, but no matter how you look at it they either failed the "policy" or knowingly put him back into action with a concussion. At the very least they misreported the second. If he were returned in Week 11 and "aggravated" it then he was not properly handled the first time.

179. The plight of former NFL players suffering from brain injuries caused by their service in the game has continued. One example is provided by the case of Dave Duerson ("Duerson"), a former safety for the Chicago Bears and the New York Giants. After suffering months of headaches, blurred vision and deteriorating memory, Duerson committed suicide at the age of 50 on February 17, 2011. His final note asked that his brain be given to the NFL brain bank for evaluation.

180. On May 2, 2011, researchers at CTSE at Boston University reported that Duerson was suffering from CTE and released photographs of the autopsy of his brain. Examples of those photographs obtained from the website of CBS Chicago are reproduced below:



The top row of photographs depicts three half sections of Duerson's brain that exhibit multiple areas of damage (brown coloring) in the frontal and temporal cortex, hippocampus and

amygdala. The bottom row of photographs depicts microscopic images from these damaged areas, showing severe neurodegeneration. As CBS Chicago reported:

Dr. Robert Cantu, co-director of the CTSE, said at a news conference that such results normally are published first, but the Duerson family wanted them released earlier.

"It is our hope that through this research questions that go beyond our interests may be answered," The Duerson family said in a statement. "Questions that lead to a safer game of football, from professional to Pop Warner; Questions that lead to better diagnostic tests for those alive; and Questions that lead to a cure; will all hopefully be answered." (Emphases added).

181. When this information was reported, DeMaurice Smith, Executive Director of the NFLPA, stated that the fact that Duerson was suffering from CTE “makes it abundantly clear what the cost of football is for the men who played and the families. It seems to me that any decision or course of action that doesn’t recognize that as the truth is not only perpetuating a lie, but doing a disservice to what Dave feared and what he wanted to result from the donation of his brain to science.”

182. Another example is provided by the case of John Mackey (“Mackey”), the former tight end of the Chicago bears, who died in July of 2011 and for whom the 88 Plan described below was named. Mackey was diagnosed with frontotemporal dementia in 2007, forcing him to live full-time in an assisted living facility. The NFLPA refused to pay a disability income to him because it claimed that there was no proven direct link between brain injury and NFL game participation. When the 88 Plan came into being, he received payments pursuant to it, but they were far less than his family’s costs. Mackey made less than a total of \$500,000 during his decade-long NFL career. His wife, Sylvia, had to work as a flight attendant to supplement his NFL pension of \$2,500 a month after they sold their California home to provide